

[54] **CORNER CONSTRUCTION FOR A CORRUGATED BOX**

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[51] Int. Cl. **B65d 5/26**

[58] Field of Search **229/31 R, 32, 33, 35, 36**

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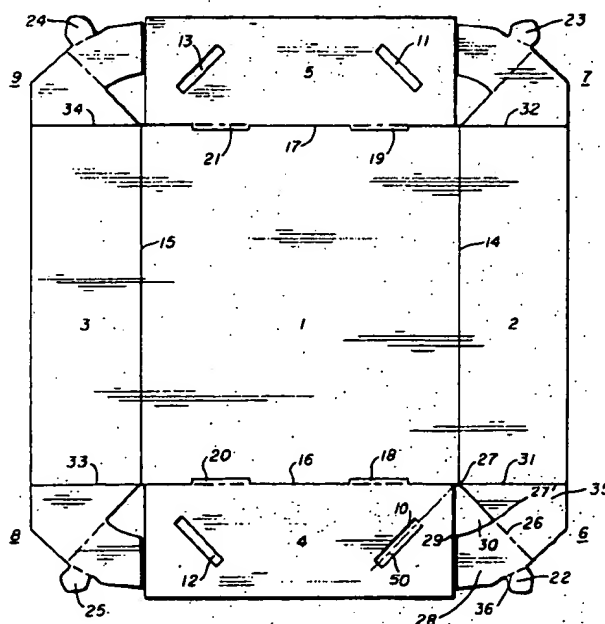
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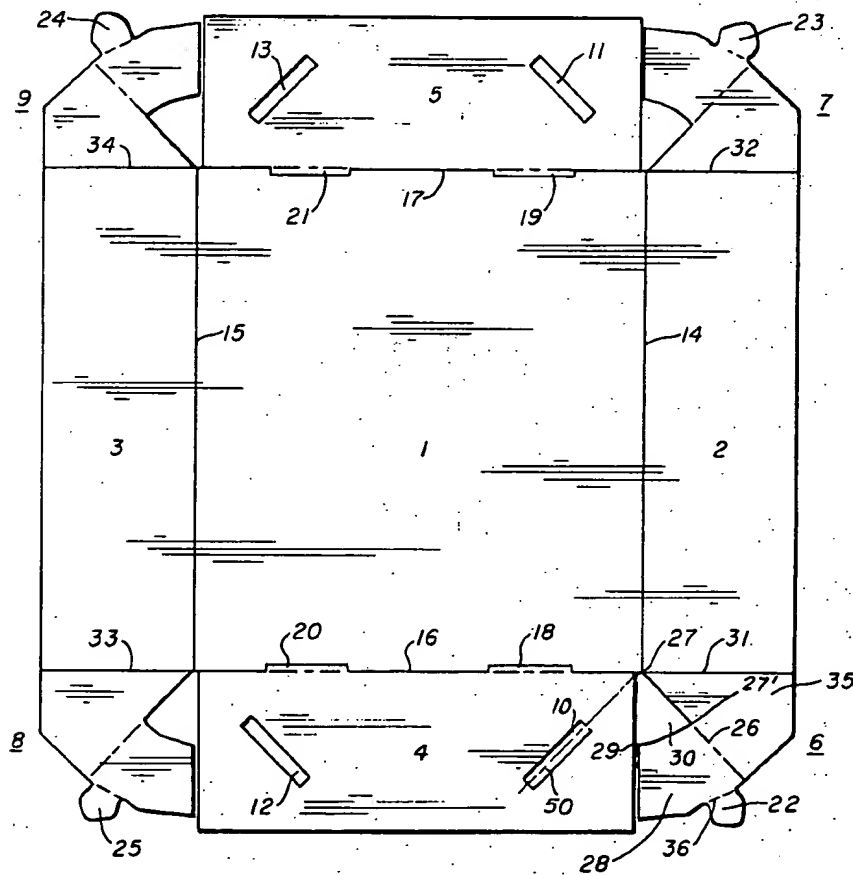
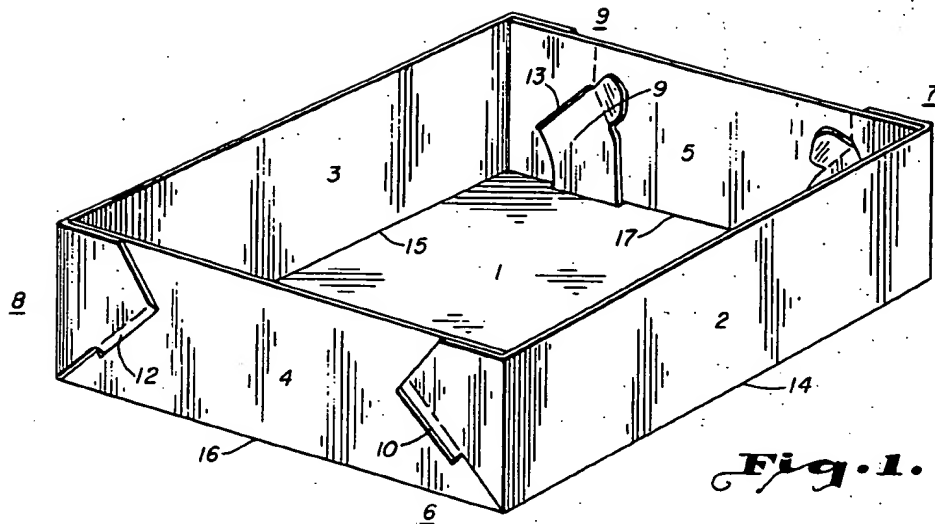
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[57] **ABSTRACT**

An improved corner construction for a corrugated paper box in which each of the corner flaps of the corrugated box comprise three score lines therein and a foldable interlocking tab attached thereto for insertion through slots in each of two end panels, the corner flaps with the foldable interlocking tabs being attached to each of two side panels; the corner flaps with foldable interlocking tabs being so constructed as to slide through the slots in end panels into a recess located in the main panel of the corrugated box thus enabling one section of the paper box to telescope easily into the other section of the paper box.

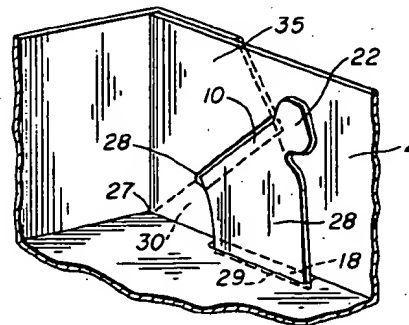
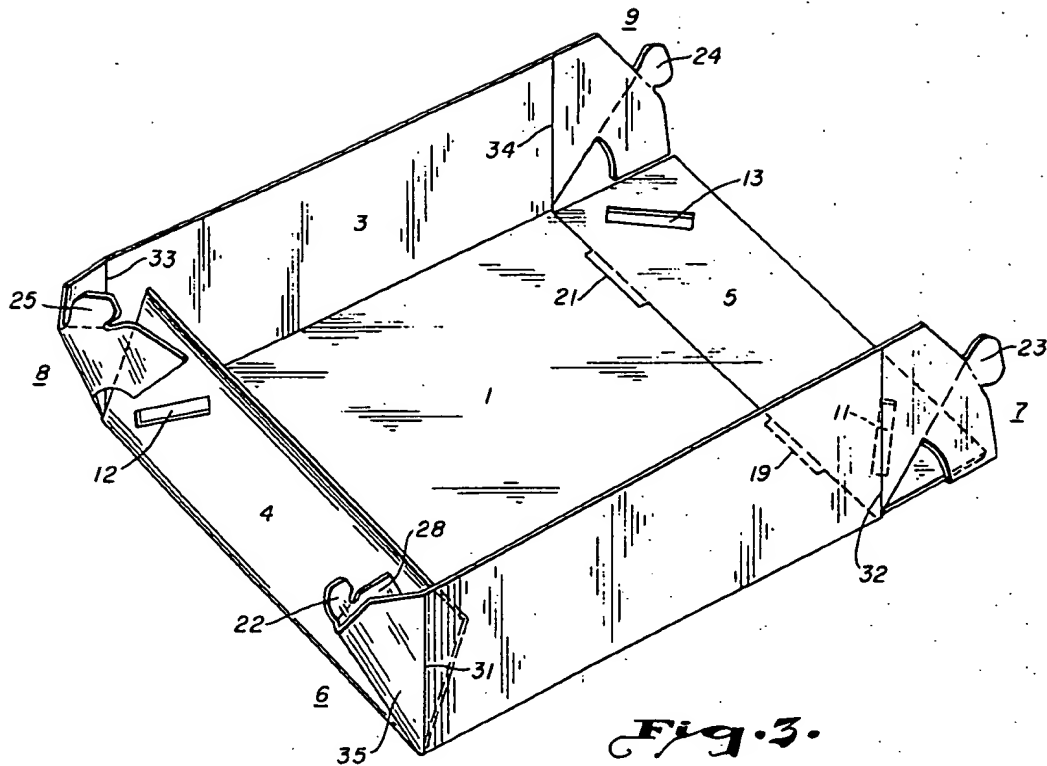
4 Claims, 4 Drawing Figures





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CORNER CONSTRUCTION FOR A CORRUGATED BOX

BACKGROUND OF THE INVENTION

The corrugated paper box industry has for sometime been plagued with a problem of manufacturing a corrugated paper box with corner construction of ample strength to be self supporting without the aid of cloth tape or metal staples, especially, in that part of the box industry serving meat packers for packaging heavy cut meat for domestic use and for export. The present corrugated box available for this type of service requires either tape or metal staples in each of the corners to give ample strength to the corner construction. This requirement makes assembly of the boxes cumbersome and costly to produce packing boxes with sufficient corner strength.

SUMMARY OF THE INVENTION

It is the object of this invention to provide a corrugated paper box with improved corner structure so as to strengthen the corners of the present box structure.

It is a further object of this invention to provide a corrugated paper box corner construction with sufficient strength so as to be self supporting and require no additional support means.

It is a further object of this invention to provide a corrugated paper box corner structure which is adaptable to speedy assembly.

It is still a further object of this invention to provide additional means to hold the corner structure exact when assembled.

It is a further object of the invention to furnish a blank with simple peripheral configuration which enables like blank to be cut with but a minimum of scrap material.

Further and additional objects will appear from the description, accompanying drawings and assembled claims.

In accordance with the embodiment of this invention, a corrugated box useful for packaging heavy materials such as trimmed meat is provided with a unique corner construction which adds strength to the corners eliminating the need for metallic staples and cloth tape to reinforce the corners. In addition to this feature, the interlocking corner flaps are so constructed that the cross-sectional strength of the corrugated structure is incorporated by having the flaps snap into recesses in the main panel of the box itself and thus double the strength of the box sections on each of the corners when the box is formed without additional support means. The configuration of the flap is shaped for easy assembly and for firm support at the corners. The advantages of this new type of corner construction will become apparent from the description which follows.

DESCRIPTION

FIG. 1 is a perspective drawing portraying the corrugated box assembly suitable for both the top and bottom section of the corrugated box.

FIG. 2 is a plan view of the blank suitable for both the top and bottom sections of the corrugated box.

FIG. 3 is a perspective drawing showing the corrugated box partially assembled.

FIG. 4 is a perspective drawing showing a sectional view of the corner structure of the corrugated box assembled.

Reference is made to the drawings particularly to FIG. 1, which shows the improved corner construction in an assembled position.

In FIG. 1, the box blank as shown in FIG. 2 is shown assembled. The assembled box blank is suitably for use as either a top or a bottom section of the improved corrugated box. FIG. 1 shows a main panel 1 with first and second side panels 2 and 3 and first and second end panels 4 and 5, all of which are joined to the main panel 1. Attached on each of the first and second side panels 2 and 3 is shown end flaps 6 and 7 and end flaps 8 and 9 respectively. End panels 4 and 5 each are slotted to provide means to insert the interlocking end flaps 6, 7, 8 and 9 into the slots 10, 11, 12 and 13 to form the assembled box section as shown in FIG. 1. Score lines 14, 15, 16 and 17 are provided so that side panels 2 and 3 and end panels 4 and 5 can be readily erected into position in assembling the box.

Reference is made to FIG. 2 which shows the box blank. Each of slots 10, 11, 12 and 13 are positioned in the end panels 4 and 5 so that a center line 50, originating in a corner of the main panel 1 and extending into the end panel at an angle of approximately 45° bisects the slot as shown. The main panel 1 is shown with side panels 2 and 3 joining the main panel at score lines 14 and 15 respectively and end panels 4 and 5 joining the main panel at score lines 16 and 17 respectively. End flaps 8 and 9 with tabs 25 and 24 respectively are attached to side panel 3 at score lines 33 and 34 and end flaps 6 and 7 with tabs 22 and 23 respectively are attached to side panel 2 at score lines 31 and 32 respectively. The configuration of end flaps 6 can best be described as having tab 22 attached to the end flap at score line 36, a second line 26 in end flap 6 is aligned with a point 27 at approximately 45° with score line 31 and extends to the outer edge of end flap 6 to provide folding means in the end flap 6. Flap 6 has a cut out area in the inner section bounded by perimetrical lines from point 27 through point 27' then through an arc whose radius is taken from point 27 to a point 29. The cut out area 30 is necessary to provide for easy fast assembly and to provide for an exacting fit when section 28 of the end flaps 6 is inserted into slot 10. Note the position of section 28 in FIG. 4. Tab 22 like tabs 23, 24, and 25 is carefully shaped with a dihedral angle on one side and a curved section on the other side. This feature provides a firm catch when section 28 is inserted into slot 10 while the curved side provides for easy assembly. Tab 22 provides the interlocking means for holding end flap 6 in position when section 28 is inserted into slot 10; likewise tab 23, 24, and 25 hold end flaps 7, 9 and 8 respectively in place when placed in slots 11, 13 and 12 respectively. When the box 1 is assembled section 28 rests in recess 18. Each of the remaining end flaps 7, 8 and 9 have configuration similar to end flap 6 and when in assembled position end flaps 7, 8 and 9 rest in their respective recesses 19, 20 and 21.

Reference is made to FIG. 3 which shows the corrugated box being assembled. Panel 4 is shown partially erected with section 28 inserted in slot 10 FIG. 1 while end flap 8 is shown ready to enter slot 12. End flaps 7

and 9 are shown in an unassembled position with side panels 2 and 3 in an erected position.

Reference is made to FIG. 4 which portrays a fragmented corner section of box 1. In this view end flap 6 FIG. 1 has been inserted into slot 10, interlocking tab 22 is in locking position, section 35 is on the outside surface of end panel 4 and section 28 is on the inside of end panel 4 in recess 18. This figure shows the interlocking of the end panel 4 with the end flap 6 to form the improved corner structure which does not require reinforcing for suitable packaging for heavy materials.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is, therefore, not the purpose to limit the patent granted herein other wise than necessitated by the disclosure.

I claim:

1. In a blank for a corrugated box having a main panel with edges for hingedly attaching, oppositely opposed first and second end panels each having a plurality of slots and oppositely opposed first and second side panels, a new and improved corner construction formed by extending

a. the said first and second side panels into a plurality of end flaps,

1. each of the said end flaps having a first and second outer edge having a first score line separating each of the said end flaps from the said first and second side panels respectively,

b. a second score line in each of the said plurality of end flaps, positioned at approximately a 45° angle with the said first score line aligned with a point in each of the corners of the said main panel and extending to the said first outer edge of each of the said end flaps,

c. each of the said first outer edges of the said end flaps having a tab hingedly joined thereto, with a third score line separating the said tabs from the said end flaps,

d. an opening in each of the said end flaps,

1. the said opening formed by a perimetrical line extending from the said point in each of the said corners of the said main panel to the beginning of the said second score line said beginning located approximately half the distance from the said point in the said corner of the said main panel to the said first outer edge of the said end flaps, then in an arc to a second outer edge of each of the said end flaps,

2. the said arc having a radius taken from the said point in each of the said corners of the said main panel.

2. A corrugated box formed from an integral blank as claimed in claim 1, where the said plurality of end flaps hingedly connected to the said first and second side panel along the first said score line are foldably connected to the first and second end panels by inserting the said end flaps into the said plurality of slots on the outside of the said end panels.

3. The corrugated box as claimed in claim 2 where the said slots in the said end panels are positioned on a center line which is approximately on a 45° angle originating at the said point in the said corners of said main panel of the said corrugated box.

4. The corrugated box as claimed in claim 2 wherein the said main panel has a plurality of recesses, the said recesses being positioned in the said main panel so as to provide a nesting place for the said end flaps when the said end flaps are inserted through the said slots in the said end panels of the said box.

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